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Redesigned curriculum for nature

”Adapted Accessibility for All – 3A”

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*Romanian
Angel Appeal*

Introductory note :

The Science discipline aims at observing and perceiving the world in its entirety, with its component elements, processes and characteristic phenomena, as well as learning through understanding and application. In science classes, students will develop their knowledge, starting from exploring the world around them, their immediate living environment, the relationships between living things and their living environment, as well as the consequences of their own behavior on their health and the environment.

The learning of this discipline aims to relate the student to the living environment, with the specific means and methods, adapted to his age.

The program aims at the development of communication skills and capacities, individual study, understanding and valorization of scientific information, but also the practice of care and protection skills towards one's own health, towards the health of others and towards that of the surrounding environment. Understanding the world around them, observing and exploring it, will give students the opportunity to prepare for the future, to develop their curiosity and interest in certain aspects of it.

In the situation of students with mental disabilities (Autism, Down Syndrome, etc.), the acquisition of new forms of behavior, the adjustment to the environment, is a circumstance on which their evolution and progress depends. Obtaining information through observation, investigation, exploration, practical activity, practice, etc. they will lead to new types of interaction with the environment and the consolidation of those already acquired.

The teaching staff will mainly focus on adjusting the mental equipment of the child with mental disabilities, regaining and regaining his independence, in relation to the environment, forming the quality of not depending on anyone, the freedom to act or govern himself according to the conditions natural externalities of social life.

Online school has been and continues to be a challenge for everyone involved in the educational process, even more so for students with disabilities. The transition from the "face-to-face" formula to the "online" way of delivering education, implied a bending to the requirements imposed by the emergency, but also a didactic "turn" in the approach to learning activities for students with disabilities. In the absence of a decent technological infrastructure, without consistent empowerment in the area of digital skills of teachers, without free access to online platforms, with poor digital and multimedia teaching resources, teachers had to quickly identify solutions to ensure all children access to an education quality.

The present curriculum, whose contents can be applied in the classroom as well as in online teaching, promotes the approach of the principle of small steps, the division of competence into small sequences and the chaining of objectives in a certain order, thanks to the adaptation of the learning contents to the particular circumstances of the child, to its real acquisition possibilities, to the characteristic features

and individual situations, but also to the area of its proximal development.

Through these activities, the aim is in particular to enrich the child's life experience and maintain his emotional connection with nature. From this connection, it will be possible to develop, naturally, the adult's responsibility towards the surrounding world.

Background information for the subject: The study of the discipline Natural Sciences aims at observing and perceiving the world in its entirety, with its characteristic components, processes and phenomena. Students are guided to develop their knowledge by exploring and investigating the world around them.

The curriculum proposes the integrated study of the natural sciences, a structuring of the problems addressed, starting from a series of topics appropriate to the understanding capacity of the student with mental deficiencies, by relating it to the living environment.

The structure of the school program includes the following elements:

- Presentation note
- General skills
- Specific skills and examples of learning activities
- Contents
- Methodological suggestions

Subject:	Science
Equipment and resources:	<p>To support classroom and distance learning activities, teachers and students use several specific means, the most common of which are:</p> <ul style="list-style-type: none"> - Computer, phone, laptop, tablet, smartphone, smart board - Educational platforms (Microsoft Teams – Microsoft Classroom, Google Meet, Zoom, etc.) - Interactive educational software - Atlases, models, encyclopedias, books, magazines, thematic boards, drawings, collages, sketches, models - Different materials - paper, fabric, cotton wool, plasticine - Plant seeds and bulbs, plant pots, pots of different sizes - simple/already known applications for asynchronous group communication, such as Whatsapp, Facebook messenger; - phone calls/SMS/communication channel with each student; - use of open educational resources and digital content, such as websites with information and illustrations, online libraries, simulations, educational software, virtual laboratories, virtual museums,

	<p>Digitaliada, LearningApps, etc.;</p> <ul style="list-style-type: none"> - applications for synchronous group communication through video calls/video conferences, such as Webex, Zoom, Meet, Teams, Skype. <p>Added to these are online tools and applications for learning activities (eg: Kahoot, Padlet, Dotstorming, Wordwall, etc.), as well as the eTwinning platform for complex collaborative projects.</p>
<p>Methodological suggestions:</p>	<p>The methodological suggestions have the role of orienting the teaching staff in the application of the school program in terms of the design and development of teaching-learning-evaluation activities.</p> <p>Students explore the world around them through learning activities based on their life experience. The age-specific desire for knowledge causes students to always ask themselves questions about the world around them. In this sense, we propose a series of investigation and exploration activities, which will facilitate their discovery of their immediate living environment, the characteristics of bodies, phenomena, processes and the relationships between them.</p> <p>Depending on the level of psychomotor and intellectual development of the students, but also on the creativity of the teaching staff, the activities will be organized and structured. They will be framed in successive logical structures, respecting the principle of accessibility, individual and age differences and the acquisition of knowledge from simple to complex. Effective learning must have a predominantly practical character, giving students the opportunity to discover nature through direct contact with it, the teaching staff having the role of a guide in this endeavor.</p> <p>Of great importance is also the description of natural disasters, specifying the negative human influences, but also the ways of prevention, protection and action in this field. An aspect that must be addressed is the formation of knowledge and attitudes in the field of education to protect the environment.</p> <p>The proposed experiments/ experiences, as well as the examples of learning activities that accompany the specific skills, are indicative, and can be adapted according to the particularities of the</p>

	<p>students, the resources available, the way the activity is carried out (face-to-face or online) or teacher options.</p> <p>In this discipline, we propose that the assessment activity be based on practical activities, which create an environment closer to life, compared to the classic assessment tools, but if the activity is carried out online, videos illustrating the practical activities carried out by the students can be used , portfolios, worksheets, simple experiments that can be done with objects from the environment.</p> <p>The assessment process must reflect, in this sense, active teaching and learning, based on discovery, through practical activities and through various learning experiences, methods adapted to the psychocognitive particularities of students with mental disabilities.</p> <p>Hikes/excursions/visits will be organized, in order to learn about some socio-cultural, economic, historical, religious objectives, from the nearby environment, if the activity will be carried out in the classroom, but also watching films/or using appropriate educational software discipline, in the case of online teaching.</p> <p>In terms of the science discipline, the platforms used, the engaging lessons with brightly colored images, the varied worksheets, can create the image of a corner of nature, in which students can happily display their own creations: puzzles, projects, sheets, showing of involvement and communication.</p>	
<p>General competences (framework objectives)/ Learning outcomes (reference objectives)</p>	<ol style="list-style-type: none"> 1. to develop capacities for observing/exploring the natural environment; 2. to make it easier for the student to solve some problem situations, specific to the living world; 3. to develop for the student manifestations in the direction of adopting a healthy lifestyle; 	<ol style="list-style-type: none"> 1. to develop skills for investigating the surrounding world; 2. to develop the student's skills of knowledge, understanding and reproduction of the phenomena in the environment; 3. to facilitate the student's development of positive attitudes regarding the environment;

	<p>1.1. The student will be able to obtain information from different sources, regarding the characteristics of some processes and phenomena;</p> <p>1.2. The student will be able to solve directed worksheets, within simple activities;</p> <p>2.1. The student will be able to observe, with support, the characteristics of biological systems;</p> <p>2.2. The student will be able to use known methods to investigate the living world;</p> <p>3.1. The student will be able to use the acquisitions in the field of biology in everyday life;</p> <p>3.2. The student will be able to identify the consequences of human actions on the environment</p>	<p>1.1. The student will be able to describe, in his own words, the social and cultural environment;</p> <p>1.2. The student will be able to list the observable characteristics of living things in the immediate environment;</p> <p>1.3. The student will be able to observe directed in the environment, phenomena and living things;</p> <p>2.1. The student will be able to use specific terms in describing some bodies/living things in the environment;</p> <p>2.2. The student will be able to understand changes in the immediate environment;</p> <p>2.3. The student will be able to adopt certain behaviors in response to the phenomena in the environment;</p> <p>3.1. The student will be able to participate in activities to care for and protect plants and animals;</p> <p>3.2. The student will be able to adopt appropriate behavior in order to maintain a healthy environment;</p> <p>3.3. The student will be able to demonstrate ecological behavior.</p>
Topic 1:	Living things in their environment	Elements of the natural physical environment
Content (learning content):	<p>- Living things in the immediate environment (garden/ park/ orchard, yard)</p> <p>-Living things in the more distant environment (meadow, forest, running/</p>	<p>-Objects and materials from the environment;</p> <p>-Phenomena of nature;</p> <p>-Garden plants</p> <p>-Domestic animals and birds;</p>

	standing water) -Environmental factors and their variation;	- Characteristics of bodies (shape, size, colour, size, smell, etc.);
Learning outcomes (reference objectives) / Example activities:	Mild	Moderate
	<ul style="list-style-type: none"> - Animal recognition exercises from the atlas zoological atlases or consulting animal websites; - Watching videos about the environment of animals and plants; - Observing pictures of different living organisms, environments, to extract characteristics of the structures, phenomena, processes represented; - Participating in hikes near the school to observe the characteristics of ecosystems; - Observing and verbally describing living things in the immediate environment; 	<ul style="list-style-type: none"> - Description of bodies/living things by shape, colour, smell, size, etc.; - Recognising animals from different geographical environments; - Activities to observe some reactions of plants, animals, humans to the influence of environmental factors; - Identification of natural phenomena (light, dark, cold, heat, thunder, etc.); - Collecting plants, insects, rocks, stones, etc. from the environment; - Role plays, exhibitions, drawings, competitions.
Evaluating outcomes:	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc. 	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc.

Topic 2:	Representative species	Characteristics of the social and cultural environment
Content (learning content):	-Example species -Adaptation of their living environment;	- School and surroundings; - Housing and surroundings
Learning outcomes (reference objectives)/Example activities:	Mild	Moderate
	<ul style="list-style-type: none"> - photographing some of the life found in the ecosystem to make observations; 	<ul style="list-style-type: none"> - exercises in recognising the school space and school surroundings;

	<ul style="list-style-type: none"> - observing the influence of environmental factors on the growth and development of certain living organisms (e.g. nature calendar, some collections/exhibitions of photographs of ecosystems observed, identification of polluted and unpolluted areas); - stating a situation - problem / working hypothesis for the purpose of an investigation (e.g. why most animals in a plain are grey in colour, why certain animals are only found in certain places or at certain times of the day, why many plants in the plain have small, odourless flowers, etc.); - exercises in recognising animals from different geographical environments; - making collections of cones, seeds, stones, feathers, etc.) 	<ul style="list-style-type: none"> - activities to identify personal or familiar objects in reality or in pictures; - activities to identify the stages of an action and to record the moments of an action; -exercises to visually discriminate the position and orientation of objects, to change the spatial relationships between objects in relation to certain objects; - role plays, exhibitions, drawings, competitions.
Evaluating outcomes:	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc. 	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc.
Topic 3:	Relationships between living things	Phenomena of nature
Content (learning content):	<ul style="list-style-type: none"> -Feeding (trophic categories, food chains); -Reproduction; -Hunting; 	<ul style="list-style-type: none"> - Observable transformations of nature during the four seasons; - Human activities specific to each season in rural or urban environment.
Learning outcomes (reference objectives)/Example activities:	Mild	Moderate
	- Discussions regarding the way of life of wild	- Communication (by drawing or verbally) of

	<p>animals in our country;</p> <ul style="list-style-type: none"> - Identification of food and shelters for wild animals; - Completing some observation sheets following the conduct of experiments (for example: plants and animals encountered in different living environments, animal behaviors observed at different times of the day, characteristics of the composition of living things observed, the variation of environmental factors at different times of the day, etc.); - documentary visits to museums, greenhouses, botanical gardens, zoos, etc. ; - Making a poster/ a diary about your favorite animal; - Readings that contain curiosities about animals. - Practical works, simple experiments, simulations on models, role play, etc.; - Consulting atlases, encyclopedias, images, websites, etc. 	<p>effects that natural phenomena have on the environment;</p> <ul style="list-style-type: none"> - Observing in concrete situations or on the basis of drawings, pictures, etc., changes in animal, plant and human life caused by the succession of the seasons; - Observation of the reactions of animals to the influence of environmental factors; - Activities to read/complete the calendar of nature (drawn or symbolised); - Exercises in making collages on natural phenomena; - role-playing on different themes in different contexts, exhibitions, drawings, competitions.
Evaluating outcomes:	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc. 	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc.
Topic 4:	Human body	Hygiene of the immediate area
Content (learning content):	<ul style="list-style-type: none"> - The component parts of the human body; - Rules for maintaining health; - Similarities and differences between humans 	<ul style="list-style-type: none"> - Household hygiene; - Classroom hygiene.

	and other living creatures	
	Mild	Moderate
Learning outcomes (reference objectives)/Example activities:	<ul style="list-style-type: none"> - Describe the parts of the human body; - Associate the image of an internal organ with its name and role; - Locate the internal organs on the image of the human body on the sheet received; - Comparing similarities and differences between humans and other living things; - Exercises in health maintenance behaviour; 	<ul style="list-style-type: none"> - Carrying out practical household activities: in the classroom, in the kitchen, in the garden, in the school yard, etc; - Exploring objects through sensory integration; - Identifying dangerous objects and spaces in the environment; - Forming behaviour to avoid hazards;
Evaluating outcomes:	Practical works, simple experiments, simulations on models, role play, etc.; <ul style="list-style-type: none"> - Consulting atlases, encyclopedias, images, websites, etc. 	<ul style="list-style-type: none"> - Practical works, simple experiments, simulations on models, role play, etc.; - Consulting atlases, encyclopedias, images, websites, etc.

Topic 5 :	The importance of living things for nature and humans	Influence of environmental factors on plants and animals
Content (learning content):	<ul style="list-style-type: none"> - The importance of plants for nature and man - The Importance of animals for nature and man 	- Natural disasters; ways of prevention and action.
Learning outcomes (reference objectives)/Example activities:	Mild <ul style="list-style-type: none"> - Awareness of the consequences of human activities and behaviour on the environment; - Recognition of the importance of cultivated plants; - Recognition of the economic importance of plants and animals; - Awareness of the health benefits of medicinal plants; 	Moderate <ul style="list-style-type: none"> - Simulation of desirable behaviours in case of disasters/natural calamities; - Selecting pictures, drawings about the environment from magazines, specialist websites; - Role-playing games on specific biology themes; - Exhibitions, drawings, competitions.

	<ul style="list-style-type: none"> -Understanding the importance of protecting plant and animal species in nature reserves; - Solving problem situations in the living world based on logical thinking and creativity; - Role-playing games on specific biological themes; -Exhibitions, drawings, competitions. 	
Evaluating outcomes:	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc. 	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc.

Topic 6:	The human place and its impact on the environment	The environment and its protection
Content (learning content):	<ul style="list-style-type: none"> - Cultivated plants and their care - Domestic/pet animals and their care - Ways to prevent infections and pest infestations 	<ul style="list-style-type: none"> -Actions of students that damage the natural environment; - Protection of the environment by students
Learning outcomes (reference objectives)/Example activities:	<p style="text-align: center;">Mild</p> <ul style="list-style-type: none"> - Role-playing games on plant and animal care; -Simulation of actions taken to prevent pest infestation from pets and domestic animals; - Use of medicinal plants in human life; - Growing plants (e.g. mini greenhouses, caring for classroom plants and green spaces around the school); - Animal care (e.g. aquarium, domestic and pet animals, building bird houses); - Taking trips to observe the environment; 	<p style="text-align: center;">Moderate</p> <ul style="list-style-type: none"> - Creating a living classroom corner; - Care of the plants in the living corner; - Animal care activities; - Use of gardening tools (hoe, rake, sprinkler, etc.); - Cleaning activities in the personal room, classroom; - Making posters with hygiene rules; - Taking trips to observe the influence of human actions on the environment;



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	<ul style="list-style-type: none"> - Observing the effects of human actions on the natural environment; - Adopting appropriate ecological behaviour in interactions with the environment; - Creating posters to promote a healthy lifestyle; - Making various products from recyclable materials. 	<ul style="list-style-type: none"> - Environmental greening activities; - Practical activities to sort waste; - Didactic game - "What's good, what's bad?" ; - Exhibition of drawings/practical work on environmental and health issues; - Role-playing games on different themes in different contexts.
<p>Evaluating outcomes:</p>	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc. 	<ul style="list-style-type: none"> - Practical work, simple experiments, model simulations, role-playing, etc; - Consulting atlases, encyclopaedias, images, websites, etc.

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